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09/818,085	03/26/2001	Douglas Miller	52126.00006	2845

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DIGEO, INC.  
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EXAMINER	
LAMBRECHT, CHRISTOPHER M	
ART UNIT	PAPER NUMBER
2623	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/22/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

09/818,085

Applicant(s)

MILLER ET AL.

Examiner

Christopher M. Lambrecht

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 November 2006.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3,4,6,8,9,12-17,19,21 and 27-38 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1,3,4,6,8,9,12-17,19,21,27-34 and 36-38 is/are rejected.  
7) ☒ Claim(s) 35 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Arguments*

1. Applicants' arguments filed November 27, 2006 have been fully considered but they are not persuasive.

The rejections of claims 8, 14, and 27-29 rely upon the combination of prior art references to Williams and Kim. Applicants argue that the proposed modification "would change the principle of operation of the universal remote control of Williams, rendering the remote control unable to perform its function of determining the correct command codes for functions of the device." (Reply, 11.) Applicants assert that Williams determines correct command codes by selecting a command code, transmitting the command code, detecting whether the device performed the function, and if not, trying again using a different command code. Applicants further assert that "Williams will no longer perform [this] function" when modified "as suggested in the Office Action[.]" (*Id.*)

Applicants' argument assumes that the teachings of Williams preclude any attempt to control a particular device with a command code where a previous attempt to control the device with the command code was not followed by detection of the proper function. However, Williams recognizes that failing to detect the proper function responsive to transmitting a command code does not necessarily mean the command code is incorrect. For example, Williams discloses that upon failure to detect the proper function of device, the code selection routine may be repeated using different transmission paths. (Williams,

col. 9, ll. 8-20.) Thus, the proper function may be achieved by sending a command code, despite previous failure using the same command code. This suggests that once the correct command codes for a particular device are known (see, *id.*, col. 8, ll. 55-65), a command might be sent repeatedly without changing the code set until the proper function is detected.

Thus, modifying Williams to include sending a channel change command without changing the set of codes neither renders the prior art unsatisfactory for its intended purpose nor changes the principle of operation of the prior art.

Applicants additionally argue that there is no motivation to combine Williams and Kim. Applicants assert that Williams and Kim are directed to achieving different objectives and one of ordinary skill in the art would not look to either reference to modify the other. The examiner disagrees. Both Williams and Kim are directed to techniques for improved remote control of appliances such as televisions, video recorders, and set top boxes.

Regarding claim 30, Applicants argue that Williams and Kim neither teach nor suggest repeatedly detecting a channel state of a set top box in order to maintain the channel state in the initial channel state. The examiner disagrees. Williams discloses repeatedly detecting a channel state display of a set top box display to confirm whether specific functions such as channel requests have occurred. (Williams, col. 4, l. 5 - col. 5, l. 13.) Functions are confirmed by comparing the current state to a desired or expected state. (*Id.*, col. 8, ll. 5-11.) Thus, any command to tune to the currently tuned channel is

confirmed by comparing the current channel state to the initial channel state. Because these states are the same, the current state is not determined to be different than the initial state and the process ends, thereby performing the steps required by claim 30.

For the same reasons discussed above, the amended claims 1 and 6 and new claims 36-38 fail to patentably distinguish over the prior art of record.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 14, 19, 21, 27-32, 34, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams in view of Kim (of record).

Regarding claim 27, Williams discloses a companion box (110) configured to communicate with a set top box (130 or 140) via an IR blaster (120) to affect a channel state (i.e., "function", which includes channel selection, col. 4, ll. 19-25) of the set top box (see fig.1, col. 4, ll. 6-62), the companion box comprising:

an IR blaster capable to use a set of codes to send a command via an IR beam to the set top box (col. 8, ll. 22-32); and

a channel state recognition circuit (235) in communication with the IR blaster, the channel state recognition circuit including a processor and a plurality of light-sensing elements ("sensors") positioned relative to light emitting devices on a display of the set top box, the light emitting devices indicating the channel state of the set top box (col. 5, ll. 2-6), the processor being coupled to the plurality of light sensing elements to receive one or more signals (152, 154) therefrom (col. 4, ll. 41-43) and determine the channel state of the set top box (col. 4, ll. 48-62), wherein the processor is configured to send a command via the IR blaster using the set of codes to change the channel state of the set top box to a particular channel state (i.e., channel selection up/down, col. 4, ll. 24-25) and wherein after sending the command, the processor is further configured to receive one or more signals from the light sensing elements and determine the channel state of the set top box (whether the proper function was executed, see fig.3, step 315) and if the channel state of the set top box does not match the particular channel state ("no" at step 315, fig.3), the processor is configured to send the command via the IR blaster to change the channel state to the particular channel state (fig.3, step 310, after step 317 and step 320).

Williams fails to disclose sending the command without changing the set of codes used to the send the command. However, in an analogous art, Kim discloses automatically transmitting a command to set a desired channel state of a set top box without changing the set of codes (first sending command to power the cable box (and thus the tuner, thereby changing its channel state from no channel tuned to some

channel tuned), and subsequently sending a command to change the tuning (further changing its channel state to a desired channel); device being controlled does not change, thus code set is not changed; see col. 5, ll. 5-41), thereby ensuring the desired operation is achieved (col. 5, ll. 39-41). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Williams to include sending a channel change command without changing the code set, as taught by Kim, for the benefit of ensuring the desired operation.

The limitations of claim 27 encompass those of claims 14, 28-30. Accordingly, Williams in view of Kim discloses the subject matter of claims 14, 28-30.

As to claim 19, Williams in view of Kim discloses the claimed subject matter (see Williams, col. 5, ll. 2-6).

As to claim 21, Williams in view of Kim discloses the system of claim 14, but fails to disclose the device includes a second display configured to display the set top box channel state. Official notice is taken of the fact that it is well known in the art for a second display device (e.g., television) to display the channel state of the set top box (e.g., on a window or banner of an electronic programming guide, the channel number to which the set-top box is tuned is indicated), for the purpose of keeping the user informed of the channel to which the set-top box is tuned.

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Williams and Kim to include a

second display configured to display the set top box channel state, for the purpose of keeping the user informed of the channel to which the set-top box is tuned.

As to claims 31 and 32, Williams in view of Kim discloses the claimed subject matter (see Williams, col. 5, ll. 2-6).

As to claim 34, Williams in view of Kim discloses sending the command to the set top box comprises transmitting an infrared (IR) beam from an IR blaster configured to communicate with the set top box (see Williams, col. 5, ll. 25-38).

As to claim 38, Williams in view of Kim teaches repeatedly performing the method of claim 14 on a recurring basis to determine the channel state of the set top box and ensure it matches the desired channel state (Kim: monitors feedback to confirm channel selections for pre-programmed recordings, col. 5, ll. 5-35).

4. Claims 1, 3, 4, 6, 8, 10, 12, 36, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams in view of Frett, further in view of and Kim.

Regarding claim 1, Williams discloses an apparatus (100) for determining a channel state of a set top box (130 or 140; see fig.1, col. 4, ll. 6-14), the apparatus comprising: a sensing stage capable to detect light intensity from various positions on a display and generating output signals based on light intensity detected from the various positions (col. 5, ll. 2-6); an interface to generate a feedback signal (152 or 154) to a companion box (110) for processing (col. 4, ll. 41-54), wherein the companion box is configured to detect the channel state of the set top box (detect proper function, which



includes channel selection; see col. 4, ll. 19-25, 54-62, col. 5, ll. 2-6) and based on the channel state (whether proper function detected; see fig.3, step 315), to automatically send a command to the set top box to change the channel of the set top box to a predetermined desired channel (fig.3, step 310, after steps 315, 317, and 320).

Williams in view of Frett fails to disclose sending a command to change to a user-specified, pre-programmed channel, without changing the set of codes. However, in an analogous art, Kim discloses automatically transmitting a command to set a user-specified, pre-programmed channel state of a set top box without changing the set of codes (first sending command to power the cable box (and thus the tuner, thereby changing its channel state from no channel tuned to some channel tuned), and subsequently sending a command to change the tuning (further changing its channel state to a desired channel); device being controlled does not change, thus code set is not changed; see col. 5, ll. 5-41), thereby ensuring the desired operation is achieved (col. 5, ll. 39-41).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Williams and Frett to include sending command to change to a user-specified, pre-programmed channel, without changing the code set, as taught by Kim, for the benefit of ensuring the desired operation.

As to claim 3, Williams, Frett, and Kim disclose the apparatus of claim 1 wherein the sensing stage comprises a plurality of light sensing devices, each of the

light sensing devices capable to detect light intensity at a corresponding position on the display (Williams, col. 5, ll. 2-6).

As to claim 4, Williams, Frett, and Kim disclose the apparatus of claim 1 wherein the sensing stage comprises an array of light sensing devices (i.e., multiple sensors) capable to detect light intensity at the various positions of the display (Williams, col. 5, ll. 2-6).

As to claim 6, Williams, Frett, and Kim disclose an apparatus and corresponding method as discussed above with respect to claim 1, including generating and comparing analog values based on the detected states (Frett, col. 5, ll. 15-35), and transmitting a bit stream (the digital values) to the companion box (Williams, col. 4, ll. 41-48).

Regarding claim 8, Williams, Frett, and Kim disclose a set-top box channel state system as discussed above, further comprising: an infrared blaster (120) capable to use a code set to send commands via an IR beam to the set-top box (see Williams, fig.1, col. 3, l. 43-48), a character recognition engine (28) capable to determine set top box channel state as displayed on the display based on the output of the light-sensing elements (see Frett, fig.3, col. 5, l. 54 - col. 6, l. 20), a channel state analysis engine (235) communicatively coupled to the character recognition engine and capable to determine if the channel state matches a desired channel state (see Williams, fig.2, col. 8, lines 5-11), and a response engine (230) communicatively coupled to the analysis engine and the IR blaster and capable to command the IR blaster to send a

change channel command via IR beam to the set top box if the channel state does not match the desired channel state (see Williams, fig.2, col. 8, lines 21-33).

As to claim 12, Williams, Frett, and Kim disclose the system of claim 8, but fail to disclose the device includes a second display configured to display the set top box channel state. Official notice is taken of the fact that it is well known in the art for a second display device (e.g., television) to display the channel state of the set top box (e.g., on a window or banner of an electronic programming guide, the channel number to which the set-top box is tuned is indicated), for the purpose of keeping the user informed of the channel to which the set-top box is tuned.

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Williams, Frett, and Kim to include a second display configured to display the set top box channel state, for the purpose of keeping the user informed of the channel to which the set-top box is tuned.

As to claims 36 and 37, Williams, Frett, and Kim together teach the method of claim 6, wherein the claimed steps (monitoring and analyzing feedback; Williams, col. 4, l. 41 - col. 5, l. 5) are performed for in preparation for recording television content on each of a plurality of user-specified, pre-programmed channels (Kim: monitors feedback to confirm channel selections for pre-programmed recordings, col. 5, ll. 5-35).

5. Claims 15, 16, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams in view of Kim further in view of Frett as applied to claim 8, above.

As to claim 15, Williams in view of Kim discloses the method of claim 14. Further, Frett discloses determining the channel state includes using character recognition software (executed by microprocessor 28; see col. 5, l. 5 - col. 6, l. 20).

As to claims 16 and 33, Williams in view of Frett and Kim discloses the system of claim 30. Further, Frett discloses determining the channel state includes comparing the output with values in a look-up table (see col. 6, ll. 7-20).

6. Claims 9, 13, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams in view of Frett and Kim, as applied to claims 8 and 14 above, further in view of Zinzell (of record).

Regarding claims 9, 13, and 17 Williams in view of Frett and Kim discloses the system of claims 8 and 14, but fails to disclose the sensing stage includes an array of photodiodes equal in number to the plurality of light-emitting devices in the display. However, in an analogous art, Zinzell illustrates a sensing stage comprising an array of photodiodes [32, 33, . . . , 38], equal in number to the plurality of light-emitting devices [22, 23, . . . , 28] in the display [20] (see col. 5, lines 8-22). Zinzell indicates that the disclosed arrangement provides independent monitoring of each individual light-emitting segment and reduces the occurrence of false readings due to ambient lighting (see col. 6, lines 62-67 and col. 5, line 56 – col. 6, line 2).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the sensing stage of Williams in view of Frett and Kim to include an array of photodiodes equal in number to the plurality of light-emitting devices in the display, as taught by Zinzell, in order to achieve more reliable channel detection.

*Allowable Subject Matter*

7. Claim 35 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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9. The following are suggested formats for either a Certificate of Mailing or Certificate of Transmission under 37 CFR 1.8(a). The certification may be included with all correspondence concerning this application or proceeding to establish a date of mailing or transmission under 37 CFR 1.8(a). Proper use of this procedure will result in such communication being considered as timely if the established date is within the required period for reply. The Certificate should be signed by the individual actually depositing or transmitting the correspondence or by an individual who, upon information and belief, expects the correspondence to be mailed or transmitted in the normal course of business by another no later than the date indicated.

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Please refer to 37 CFR 1.6(d) and 1.8(a)(2) for filing limitations concerning facsimile transmissions and mailing, respectively.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M. Lambrecht whose telephone number is (571) 272-7297. The examiner can normally be reached on Mon-Fri, 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (571) 272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Christopher M. Lambrecht  
Examiner  
Art Unit 2623

cml



**JOHN MILLER**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**